



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,416	06/10/2005	Giacomo Nicolao Maccalli	47966.15.1	3637

22859 7590 04/18/2008
INTELLECTUAL PROPERTY GROUP
FREDRIKSON & BYRON, P.A.
200 SOUTH SIXTH STREET
SUITE 4000
MINNEAPOLIS, MN 55402

EXAMINER

ROBINSON, DANIEL LEON

ART UNIT	PAPER NUMBER
----------	--------------

3742

MAIL DATE	DELIVERY MODE
-----------	---------------

04/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/538,416	Applicant(s) MACCALLI ET AL.	
	Examiner DANIEL L. ROBINSON	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10-23-2008, 10-29-2008</u> . | 6) <input type="checkbox"/> Other: _____ |

Double Patenting

Claims 27-51 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-22 of copending Application No. 10/538,529. Although the conflicting claims are not identical, they are not patentably distinct from each other because they encompass the same subject matter because an electrically conducting material is a susceptor.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 27-43, 45, 47 and 51 rejected under 35 U.S.C. 103(a) as being unpatentable over Quan in view of Berkman.

anticipated by Quan et al (US 4,794,217). See Quan et al, for example, col. 3 lines 62-66, col. 4 lines 27-33, col. 7 line 8 to col. 8 line 36, Fig. 5-7. Therein Quan et al teaches a susceptor system for an apparatus

Art Unit: 3742

adapted to treat wafers. The susceptor Of Quan et al has a cavity 26 that extends in the longitudinal constituted by a one piece of graphite, the side walls 25 are constructed of quartz of silicon nitride (known dielectric materials that are also electrically insulating materials).

Quan does not explicitly show a hollow susceptor Berkmand discloses a graphite susceptor with a hollow portion. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a hollow susceptor as taught by Berkmand so as to support a pyrolytic heat shield.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Quan et al in view of Kordina et al (US 5,695,567).

Kordina et al teaches a susceptor device with an upper/bottom walls 13,14 and side walls 11 and 12. The

abstract teaches the invention covering walls in such an apparatus with a SiC plate or coating see col.

lines 20-67, therein Kordina et al teaches it is conventional to use a SiC coating on the susceptor walls

as the material is known to withstand high temperatures and will prevent unwanted impurities from being

incorporation in the wafer treatment process. Thus, it would have been obvious for one of ordinary skill in

Art Unit: 3742

the art at the time of the claimed invention to provide the walls of apparatus of Quan et al with a coating

of SiC as suggested by Kordina et al.

. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Quan et al in view

of Kaeppler et al (WO 02/38838) using US 7,048,802 as an English Translation.

The teachings of the Quan et al were discussed above. The application fails to teach:

A susceptor system according to claim 1 in which the piece of the upper wall (2)

and/or the piece of the lower wall (3) have grooves (22, 32) and/or ribs in the longitudinal direction for

joining with the pieces of the side walls (4, 5). See Fig.2 and col. 2 lines 50-67 of the US 7,048,802 .The

motivation to provide the grooves and or ribs of Kaeppler et al in the apparatus of the co-pending

application according to the US 7,048,802 is that the radiation (heating) from the ceiling outer wall 4'

does not pass directly to the quartz tube 6. This ensures better temperature control. Thus, it would have

been obvious for one of ordinary skill in the art at the time of the claimed invention to provide slits and or

ribs to the apparatus of Quan et al as suggested by Kaeppler et al.

Apparatus according to claim 15, comprising a first refractory and thermally insulating structure (7) which

surrounds the susceptor system (2, 3, 4, 5) and is constituted substantially

by a tube of high-porosity graphite or similar material and which extends in the longitudinal direction. The

Art Unit: 3742

foam sleeve according to the abstract of the WO publication is for improves heat insulation. Thus, it

would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide

the high porosity graphite as a material of construction as suggested by the WO publication to Kaeppler

et al to the apparatus of Quan et al.

Claims 46, 48 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quan et al in view

of Kaeppler et al (WO 02/38839).

The teachings of the Quan et al were discussed above. The application fails to teach:

Regarding claim 49: A susceptor system according to claim 12 in which the slide (6) comprises at least

one disc (61) suitable for supporting at least one substrate or at least one wafer, and is provided with a

recess (62) suitable for housing the disc (61) rotatably.

Regarding claim 51: Apparatus according to claims 15 to 19, comprising means for causing at least one

gas-flow to flow in at least one through-hole (21, 31) of the susceptor system.

Fig. 3 of the publication to Kaeppler et al teaches the conventionality of providing a recess and a disc in a

susceptor. The combination of disc and recess is conventional as it provides for a gas curtain above,

which the disc can rotate which enhances substrate support. Thus, it would have been obvious for one of

ordinary skill in the art at the time of the claimed invention to provide the disc and recess and illustrated

Art Unit: 3742

by Kaepeller et al. Likewise, Kaepeller et al shows that it is conventional to provide such a through hole

as a means to transport gas through the susceptor.

Response to Arguments

Applicant's arguments with respect to claims 27-51 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L. Robinson whose telephone number is 571-272-4788. The examiner can normally be reached on m-f 5:30-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu B Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dlr

/D. L. R./
Primary Examiner, Art Unit 3742
/Daniel L Robinson/
Primary Examiner, Art Unit 3742

Application/Control Number: 10/538,416
Art Unit: 3742

Page 8